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09/691273

TK34-10USNA

REQUEST FOR REHEARING

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PATENT

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IN THE APPLICATION OF:

ROBERT ANTHONY MARIN ET. AL.

CASE NO.: TK3410 US NA

SERIAL NO.: 09/691,273

GROUP ART UNIT: 1771

FILED: OCTOBER 18, 2000

EXAMINER: LYNDA SALVATORE

FOR: FLASH-SPUN SHEET MATERIAL

APPEAL NO. 2006-2877

REQUEST FOR REHEARING
UNDER 37 C.F.R. §41.52

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Responsive to the Decision on Appeal dated 11 October 2007 as to the above-referenced application, Appellants submit the following Request for Rehearing.

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ARGUMENT

Appellants respectfully submit that the Board of Appeals has failed to (1) completely comprehend and/or address the issues raised by Appellants with respect to the failure of the combination of Harriss et al. and Blades to establish a prima facie case of obviousness; (2) properly apply the law of In re Oelrich as to inherency; and (3) fully understand the nature of the comparative testing discussed at length in Appellants' Appeal and Reply Briefs.

1. *The Impropriety of the Combination of Harriss et al. and Blades*

At page 10 of the Decision on Appeal (the "Decision"), the Board has opined:

Because the difference in temperature between the claims and Harriss is not the issue in this case, we need not consider whether the combination of Harriss and Blades as applied by the Examiner was proper.

Of course, Appellants disagree. In a recent decision by this Board, the weight of process limitations in a product-by-process claim was discussed:

We initially take exception to the Examiner's position that the process limitation "ion beam assisted deposition" has no patentable weight, since the claimed invention is recited in a product-by-process format (Answer 3). In the examination of a claim that has been drafted in product-by-process format, the Examiner has the burden under §§ 102/103 to establish that the prior art reasonably appears to disclose a product that is identical with or only slightly different from the product claimed. See *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980); *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 325-26 (CCPA 1974). The Examiner has not met his burden in this case. The specification discloses that the IBAD process creates a conformal coating that is dense and strongly adherent to the Y-TZP substrate (Specification [Para 17]). The Specification also discloses that persons of ordinary skill in the art would have recognized that a coating resulting from an IBAD process creates a coating having high bulk density comprising very low open or close porosity and preferably less than 1.0% total porosity (Specification [Para 21]). Thus, in order to establish a prima facie case of unpatentability the Examiner must present evidence that establishes the [processing] techniques of the cited prior art produces a [product] that has [the limitations] as required by independent claims 1 and 13. The Examiner has failed to address the porosity of the coatings of the cited references. Ex parte Jiang, 2007-2210 (BPAI 2007); emphasis added.

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Thus, it is clear that the process recitations in a product-by-process case cannot be totally ignored in assessing the patentability of the claimed product. As set forth in the specification and repeatedly argued throughout prosecution of the present application, the elevated spinning temperature range is important to obtaining the unique flash spun materials of the claims.

Further, Appellants cancelled the original product claims in favor of product-by-process claims 28-30 at the Examiner's insistence, the Examiner arguing that the original product claims were indefinite "with regard to how the Applicant provides a polyethylene plexifilimentary [sic] fiber having the said physical properties" (Office Action issued 21 May 2003; page 3). Obviously, the Examiner deemed the product-by-process recitation to shed some light on the claimed subject matter.

As previously argued by Appellants, and as will be demonstrated below, Harriss et al. fail to inherently disclose plexifilamentary fabrics having the claimed limitations, and the claimed webs and fabrics cannot be made according to the Harriss et al. teachings alone (i.e. at the temperature disclosed in Harriss et al.'s Comparative Example 1); hence the reason for the Examiner's proposed combination with Blades.

Appellants have discussed the deficiencies of Blades *ad nauseum* throughout the prosecution of the present application, as well as the reasons that one of skill in the art would not have looked to Blades for a predictable way to modify Harriss et al. If the Board agrees that Blades is not combinable with Harriss et al., Appellants respectfully request that the Board so state, thus removing the rejection under 35 U.S.C. 103(a) over the combination of those references.

2. The Law as to Inherency

At page 5 (top) of the Decision, the Board indicates that the dispositive issue arising from prosecution is:

Is it reasonable to presume that fiber strands and nonwovens made in accordance with Comparative Example 1 of Harris would inherently have properties recited in the claim such that the burden shifted to Appellants to show that the claimed properties are, in fact, not obtained, and if so, have Appellants met their burden in showing there is a patentable difference in properties?

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If the Board's question is taken at face value, the outstanding rejection has been shifted from a rejection under 35 U.S.C. 103(a), depending on both Harriss and Blades, to a rejection under 35 U.S.C. 102(b) over Harriss alone. Again, Appellants request clarification as to whether Blades has any relevance to the rejection.

The case law on "inherency" is summarized in MPEP section 2112:

The fact that a certain result or characteristic may [optimally] occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534; 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). In relying upon the theory of inherency, *the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.* Ex parte Levy, 17 USPQ2d 1461, 1464 (BPAI 1990) (underlining in original; italics added).

Appellants respectfully submit the Examiner recognized that Comparative Example 1 of Harriss alone was insufficient to establish the inherency of the present claim values in the Harris sheet. At pages 8-9 of the Examiner's Answer, the Examiner dismissed the value of the comparative data cited by Appellants.

With regard to Applicant's lack of inherency arguments as to the Frazier Permeability, hydrostatic head, crush value, surface area and Gurley Hill Porosity values, the Examiner maintains that said values would inherently be present once the plexifilamentary strands are provided...Applicant has not provided any evidence to suggest that the instant resulting Frazier Permeability, hydrostatic head, crush value, surface area and Gurley Hill Porosity values are unexpected. In other words, Applicant has not shown a comparison between the relied upon examples and the instant invention produced under the claimed conditions. Absent such evidence, the Examiner asserts that the Frazier Permeability, hydrostatic head, crush value, surface area and Gurley Hill Porosity values are inherent to the plexifilamentary strands provided by the combination of Harriss et al., in view of Blades et al. (Emphasis added).

As discussed in Appellants' Reply Brief (pages 9-10), the Examiner's proposal that Appellants' showing was inadequate because the Harriss example was not modified by using the Blades temperatures was inappropriate under the patent law, essentially

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requiring a comparison of the invention with itself; In re Chapman and In re Geiger, *Id.*

In the Decision, the Board instead relies entirely on Comparative Example 1 of Harriss as providing a basis in fact and/or technical reasoning to reasonably support the determination of inherency. Inherency, of course, must be certain.

In order for prior art to anticipate a claimed compound on the ground it is inherently produced in a prior art process, the inherency must be certain. Ex parte Cyba, 155 U.S.P.Q. 756 (POBA 1966); Ex parte McQueen, 123 U.S.P.Q. 37 (POBA 1958); the fact that a prior art article may inherently have the characteristics of the claimed product is not sufficient. Ex parte Skinner, 2 USPQ2d 1788 (BPAI 1986). Inherency must be a necessary result and not merely a possible result. In re Oelrich, 666 F2d 578, 212 U.S.P.Q. 323 (CCPA 1981).

In the Decision (pp. 5-8), the Board has chosen to dissect Appellants' comparison between the comparative examples of Harriss and the present application, rather than focus on the issue of whether Harriss' comparative example is adequate to provide "reasonable support" for the inherency proposition as to the present claims. Appellants respectfully submit that the Board's approach is error.

3. ***Nature of The Comparative Testing***

Appellants respectfully submit that the inherent values of surface area, crush value, Frazier permeability, hydrostatic head and Gurley Hill porosity of Harriss' Comparative Example 1 are anything but "certain".

The *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ at 433.

Appellants question whether Harriss' Comparative Example 1 is really sufficient to "reasonably support" a finding of inherency, and thus whether the Examiner, or in the present case, the Board, has met its burden. As Appellant stated in the Reply Brief:

C.E. B of the present invention is measured for surface area, in both Tables 2 and 3. While the measurements differ slightly, both are well above the upper surface area limit in claims 28-30: "less than 10 m²/g". Thus, it

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seems clear that a material [C.E. B] which is flash spun under conditions even closer to the present claims than the closest prior art example of Harriss et al. will not meet the present claim limitations, let alone the Harriss et al. closest prior art example, C.E. 1. (Reply Brief, pp. 8-9; emphasis added).

ISSUE: Is it "reasonable" to rely on C.E. 1 of Harriss as disclosing a product which "inherently" (and therefore "certainly") contains the limitations of the present claims, in view of the failure of closer example, C.E. B of the present application, to meet the claim limitations?

The Board's attention is redirected to Appellants' comparison between Comparative Example B (C.E. B) of the present invention, and Comparative Example 1 (C.E. 1) of Harriss et al. The table below is reproduced from Appellants' Reply Brief, with the exception of replacing the data from Comparative Example A with the particular claim limitations in question.

Parameter	C.E. 1 (Harriss)	C.E. B	Claim 28	Claim 29	Claim 30
Polymer	HDPE	HDPE	PE	PE	PE
Spin agent	32% cyclo- /68% n-C5	40% cyclo- /60% n-C5	cyclo-/n-C5 mix	cyclo-/n-C5 mix	cyclo-/n-C5 mix
Polymer concentration	18.7%	17%	12-24%	12-24%	12-24%
Spin temp (°C)	185	190	205-220	205-220	205-220
Bonding	"Palmer bonder"	Point bonded /softened	None	Yes	Yes
S.A. (m2/g)	N.D.	15.5/14.78	< 10	< 10	< 10
Frazier (cfm/ft ²) as bonded	N.D.	Too low	None specified	At least 2 ¹	None specified
Gurley Hill (sec) as bonded	N.D.	8	None specified	None specified	< 6
Hydrohead (cm) bonded	N.D.	107	None specified	None specified	110
Crush value (mm/g)	N.D.	0.61	At least 1	At least 1	At least 1

1. Normalized to 1 oz/yd² basis weight

The tabular data demonstrate that in both cases of the Harriss C.E. 1 and C.E. B of the present application, the polymers, spin agent composition and the polymer concentration fall within the scope of Independent claims 28-30 of the present application. However, the spinning temperature range of the present claims is vastly

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different from both the comparative examples. In the Decision, the Board makes note of other processing variations, in an effort to distinguish the products of C.E. 1 (Harriss) from those of C.E. B (present application): different spin agent concentrations (32/68 v. 40/60); different polymer flow rates (232 lb/hr v. 61.1 lb/hr).

Appellants' question is whether it is "reasonable" to expect that the Harriss C.E. 1 is more representative of the present claim limitations than is C.E. B of the present application? In short, the answer is "no". As is aptly pointed out by the Board (Decision, page 7, finding 12), the differences between Harriss' C.E. 1 and the Examples 1-28 of the present application (which demonstrate the presently claimed invention) are greater than the differences between C.E. B of the present application and the examples of the present invention: i.e. in all examples of the present application, the spin agent mixtures are equivalent (40/60 cyclo-/n-pentane) in contrast to Harriss' C.E. 1, which discloses a spin agent mixture of 32/68 cyclo-/n-pentane. Likewise, in all examples of the present invention, the polymer flow rates are within a few pounds/hour of each other, in contrast to the polymer flow rate of Harriss' C.E. 1, which is about 4-5 times those of the present application. Is it therefore "reasonable" for the Board to rely on Harriss for inherency as to the present claims in view of these drastic differences in processing conditions that the Board itself noted? Appellants respectfully submit that it is not reasonable to expect that Harriss' C.E. 1 would necessarily and certainly result in products which inherently meet the present claim limitations.

Comparative Example B of the present application was run under conditions closer to those of the present examples than was Harriss' C.E. 1. The only difference between C.E. B and the exemplary data of the present invention (and of the present claims) is the spinning temperature, where C.E. B was spun at 190 °C, 15 °C below the lower limit of the presently claimed range (but 5 °C above Harriss' C.E. 1). In this regard, the Board's attention is directed to the "Web Properties" (unbonded) of each example in the present application. Invariably, those examples spun at temperatures below the claimed range (all of the Comparative Examples) have surface areas exceeding 10 m²/g, i.e. outside the claimed range. In contrast, in all examples of the invention, Examples 1-28, spun within the claimed temperature range, the surface areas are less than 10 m²/g; this despite variations in polymer concentration, letdown pressure, the presence or absence of screens in the spin cell, variations in the

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letdown entrance angles within the spin cells, "tunnel" design, spin orifice L/D variations and polymer flow rate variations, as noted by the Board. Appellants submit it is very clear from the data that a major factor in achieving the surface area limitation of independent claims 28-30 is the spinning temperature. The Board's reliance on the other differences between the spinning conditions of Harriss' C.E. 1 and C.E. B of the present application amounts to a red herring (see Table 3, where C.E.s B-E are compared), and the surface area limitation alone, which is contained in each of claims 28-30, is dispositive of the rejections. Withdrawal of the rejections is requested on this basis alone.

The Board's attention is also directed to Comparative Example C of the present application (p. 27, Table 3) which was spun at the same temperature as Harriss' C.E. 1. Comparative Example C exhibited surface area well in excess of the claimed value. (This comparison was previously suggested by Appellants in their reply of January 19, 2006 at page 3; second column of table incorrectly identified as "CE B").

Appellants' comparison between C.E. B and C.E. A in the Reply Brief was submitted to demonstrate the differences between similarly-spun plexifilamentary fabrics which have been point bonded and softened (C.E. B) or area (or "full surface") bonded (C.E. A). Harriss discloses that C.E. 1 was "Palmer" bonded, which is an area bonding technique (Harriss, page 7, lines 6-25; page 18, lines 6-14), equivalent to that performed on C.E. A of the present application (see description at page 18, lines 24-31). (Note that both Harriss and the present application refer to U.S. Patent No. 3,532,589 to David to further describe the area bonding process).

Full surface bonding results in a much lower air permeability of the final product, as compared to point bonding, such that in the case of C.E. A (and Appellants submit, Harriss' C.E. 1), the air permeability is too low to be measured in terms of Frazier air permeability. As such, the full surface bonded materials have air permeabilities in the Gurley Hill porosity range. As can be seen in the Table above, claim 30 specifies that the air permeability of the bonded nonwoven sheet must be less than 6 Gurley seconds. The air permeability of C.E. A was measured to be 90 Gurley seconds, and nothing in Harriss would suggest that C.E. 1 would be otherwise. The Harriss example is a highly bonded material that would almost

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certainly not "inherently" have an air permeability of less than 6 Gurley seconds, as claimed in claim 30. Reliance on Harriss' C.E. 1 as inherently meeting the limitations of claim 30 is therefore not "reasonable".

Likewise, claim 29 is directed to nonwoven sheets having even higher air permeabilities, measurable in the Frazier range. Reliance upon Harriss' C.E. 1 to inherently meet these limitations is even more unreasonable.

OTHER ISSUES

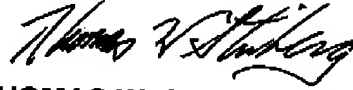
At page 11 of the Decision the Board directs the Examiner's attention to the particulars of Marshall et al., WO 98/07908, which was the precursor application to the present application. The Board notes a number of disclosures in Marshall et al. which appear similar to the present application. However, Marshall et al. do not disclose mixed hydrocarbon spinning solvent and are entirely silent regarding the surface area of the fibers produced therein. Notably, none of the hydrocarbon-spun examples of Marshall et al. (Exs. 1, 3, 5, 7, 9-15, 26 and 27) demonstrate Gurley Hill porosities below 6 Gurley seconds. Further, a review of the Shin Declaration under 37 CFR 1.132, submitted with Appellants' reply of November 11, 2003, might be valuable to the Examiner.

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The Board of Appeals is respectfully requested to remand this application to the Examiner with a direction to allow the claims.

Respectfully submitted,



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Dated: 11/5/07

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